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## Blue Line Adds Automated Station Stop Announcements

### By RUSSELL HOMAN

(Jan. 8, 2008) For 16 years, the Blue Line relied on train operators to announce stops. Now after six months of testing a new automated announcement system will do the work.

The Blue Line had used two incompatible public address (PA) systems installed in its cars, which limited which cars could be coupled. Moreover, the old systems had poor quality sound and used headset microphones that picked up background noise in the train's cab.

To solve these problems, a completely new PA system was designed and built by Blue Line employees. The first prototype system was designed by Eric Czintos, maintenance specialist, and Russell Homan, senior instructor for Rail Fleet Services. It was tested over six months to determine reliability and to get input from the operators, passengers and maintenance crews.



Incompatible PA systems and wiring harnesses, at left, were removed from all 69 light rail trains that run on the Blue Line. At right, the new automated announcement center has a sleek, no-nonsense look. The machine uses prerecorded MP3 files to notify passengers of stops and relevant safety information. The train's two-way radio is mounted atop the new PA system. Photos courtesy of Blue Line Maintenance

The final version now uses a standard, off-the-shelf MP3 player to make the actual station announcements. Announcements were professionally recorded and then converted to MP3 files.

The MP3 player is controlled by a microprocessor that reads a sensor on the wheels and together they count the distance between the stations. Halfway between the stations, the system announces what the next station will be, and just before entering the station, it announces the station name.

When the operators are ready to leave the station, they press a new button on the side of the dash to make an announcement that the doors are about to close. All standard safety announcements are automatically played between stations.

### Versatile and clear

Train operators can still make manual PA announcements on the improved system for unexpected circumstances, but these messages will also be clearer and more understandable for passengers.

Czintos designed most of the electronics and wrote the microprocessor program code. The handmade prototype PA design was converted to an electronic drawing by Wayne Cheng, associate engineer, and then sent out be cut, drilled, engraved and anodized black.

The schematic and printed circuit board (PCB) layout were both computer designed by Homan and then sent out to be fabricated. Components were installed and then soldered into 160 PCBs by Ronnie Burt, maintenance specialist.

New wiring harnesses for inside the train and inside the new PA equipment were fabricated by Steve Parker, maintenance specialist. The removal of the old PA equipment and installation of the new PA in 69 light rail vehicles was a joint effort by many Blue Line maintenance specialists.

The result of all this work is station announcements that are always clear and crisp, intercom transmissions that are understandable, and a fleet of trains that are now interchangeable.